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January 31 2015

BY ECF

The Honorable Katherine B. Forrest
United States District Judge
Southern District of New York
United States Courthouse
500 Pearl Street
New York, New York 10007

Re: *United States v. Ross Ulbricht,*
14 Cr. 68 (KBF)

Dear Judge Forrest:

This letter is submitted in response to the government's January 29, 2015, letter seeking preclusion of the expert testimony of proposed defense witness Andreas M. Antonopoulos. For the reasons set forth below, the government's application should be denied in its entirety.

Pursuant to the standards of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), as incorporated within Rule 702, Fed.R.Evid., admissibility of expert testimony requires that the testimony proffered be sufficiently reliable and that the topic of the testimony be one that is "beyond the ken of the average juror." *United States v. Tapia-Ortiz*, 23 F.3d 738, 741 (2d Cir. 1994). The range of topics which are more than a "lay matter[]" which [the trier of fact] is capable of understanding and deciding without the expert's help," is broad, varied, and sometimes counterintuitive. *See e.g. Tapia-Ortiz*, 23 F.3d 738, 741 (2d Cir. 1994) (permitting expert testimony on the "weight, purity, dosages, and prices of cocaine"); *see also United States v. Noda*, 137 F. App'x 856, 863-64 (6th Cir. 2005) (permitting expert to opine about age of child in pornography).

Indeed, both the relevant case law and the government's arguments only support Mr. Ulbricht's right to call Mr. Antonopoulos as an expert witness to respond to testimony by government witnesses as to Bitcoin, including analysis by government witness former Special

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Agent Ilhwan Yum of the FBI cyber squad as to the Bitcoins transferred from the Silk Road website to Mr. Ulbricht.

I. *The Origins of Bitcoin and the Various Purposes and Uses of Bitcoin Are Relevant to This Case and Necessary to Bring the Concept of Bitcoin Within the Ken of the Average Juror*

The government argues, at 3 of its letter, that Mr. Antonopoulos should not be permitted to testify as to the origins and uses of Bitcoin because “[t]he ‘origins’ and ‘various purposes and uses’ of Bitcoin are no more relevant here than the ‘origins’ or ‘various purposes and uses’ of cash would be relevant in a traditional drug dealing or money laundering case.” In fact, the opposite is true. Most lay people, and thus most of our jurors, have had bank accounts and are comfortable and familiar with cash transactions. But, Bitcoin is a concept outside the ken of the average juror and most, if not all, of our jurors have never conducted a single Bitcoin transaction. The defense should therefore be permitted to call an expert witness to familiarize the jury with Bitcoin, and to demystify the concept of Bitcoins. To prevent the defense from doing so could cause the jury to convict Mr Ulbricht simply based on their fear of the unknown. At the very least, expert testimony should be permitted to explain a complex and unfamiliar topic that is directly relevant to the charges in this case.

II. *The Exchange Value of Bitcoin Is a Proper Subject of Expert Testimony and Its Fluctuation Over Time Is Directly*

The government claims, at 4 of its letter, that “‘the value of Bitcoin over time since its inception, and the cause of various increases and decreases in the value of Bitcoin at certain points in time,’ as well as ‘the dollar value of Bitcoins generated through transactions on Silk Road, at various points in time, including at the time of Mr. Ulbricht’s arrest’” are “not proper subjects of expert testimony in this matter.”

In fact, the exchange value of bitcoin and causes of fluctuation in that value are proper subjects of expert testimony in that they are directly relevant to this case. Through the testimony of former Special Agent Ilhwan Yum, the government sought to show that a total of over 700,000 bitcoins were transferred from the Silk Road bitcoin wallets to a wallets contained on Mr. Ulbricht's laptop. *See* GX 620. However, the Government seized only 144,000 bitcoins from the wallet contained on Mr. Ulbricht's laptop. *See* Trial Transcript, at 1673.

The testimony of Mr. Antonopoulos will establish that market forces inherent in the Bitcoin market during the relevant time period would have precluded a cash out from the market totaling the difference between the amount the government claims was transferred to Mr. Ulbricht's wallet and the amount actually recovered. Mr. Antonopoulos can testify about the

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liquidity of the bitcoin market and how a withdrawal from the market a fraction of the size of the 540,000 bitcoin discrepancy would have caused drastic fluctuations in the market price of Bitcoin during the relevant time period. This testimony is materially relevant to the defense because the government has asserted that over 700k in bitcoins were transferred to a wallet located on Mr. Ulbricht's laptop, which is suggestive to the jury that Mr. Ulbricht was able to secrete an enormous amount of Bitcoin prior to being arrested. However, this number is contested by the defense and will be attacked through the testimony of Mr. Antonopoulos.

Moreover, expert testimony as to the value of Bitcoin is a proper subject of expert testimony. Indeed, in *United States v. Romano*, 859 F. Supp. 2d 445, 460 (E.D.N.Y. 2012), in addition to permitting the government to submit a valuation chart summarizing coin values (as the defense did here), the government presented expert testimony as to value of coins based on published price guides and newsletters in a money laundering prosecution. Accordingly, the same kind of testimony should be permitted in Mr. Ulbricht's case.

III. *Mr. Antonopoulos Should Be Permitted to Provide Expert Testimony As to the Mechanics of Bitcoin Transactions, the Ability to Track Bitcoin Transactions, and as to the Bitcoins Transferred from Silk Road to Mr. Ulbricht's Laptop*

The government claims, at 5–6 of its letter, that Mr. Ulbricht should be precluded from calling Mr. Antonopoulos to testify as to the ability to track Bitcoin transactions, the “mechanics” of Bitcoin transactions, and seemingly also as to whether the Bitcoins from Silk Road can be tied to Mr. Ulbricht. However, the government has put on purported lay witness testimony through former Special Agent Illwan Yum of the FBI's cyber squad, that the transactions on the Blockchain can be tracked from Silk Road to Mr. Ulbricht. Former SA Yum worked alongside Matthew Edmond, a PhD in cryptology, for more than 100 hours, at a cost of \$55,000 to the government, to complete his analysis of the Blockchain and provide his opinion as to the ability to track Bitcoins in this case. His testimony also required the use of complex charts and graphs. Accordingly, the integrity of the bitcoin analysis conducted by former SA Yum is clearly relevant in that it is a material fact at issue in this case. Mr. Ulbricht must be permitted to call an expert witness during the defense case to challenge the Government's assertion, admitted as evidence in GX 620, that over 700,000 bitcoins were transferred to a bitcoin wallet contained on his laptop. Independent defense investigation has uncovered that this number is implausible and the defense, through Mr. Antonopoulos, seeks to dispute this finding.

Indeed, it is well-settled that an expert witness can be called to “assess or critique another expert's substantive testimony.” See *Nature's Plus Nordic A/S v. Natural Organics Inc.*, 92 F. Supp.2d 237, 239 (E.D.N.Y. 2013). See also *Stroheim & Romann, Inc. v. Allianz Ins. Co.*, No. 01 CIV. 8236 (LTS), 2003 WL 21980389, at *4 (S.D.N.Y. Aug. 14, 2003) (“... properly supported expert testimony critiquing another expert's opinion is admissible”), see also *In re*

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Blech Sec. Litig., No. 94 CIV. 7696 (RWS), 2003 WL 1610775, at *20 (S.D.N.Y. Mar. 26, 2003) (courts often permit expert testimony "for the sole purpose of critiquing and thereby helping to explain the work of an expert witness retained by another party"). In fact, the failure of a defense attorney in a criminal trial to put on such rebuttal expert testimony has been deemed to be constitutionally deficient. See *Gerston v. Senkowski*, 299 F.Supp.2d 84, 103-105 (E.D.N.Y. 2004) (holding trial counsel's failure to consult with or call an expert to rebut the government's expert witness on the same issue "is an independent and sufficient indication of deficiency").

In this case, even though Mr. Yum testified as a lay witness, the nature of his testimony was akin to that of an expert witness in that it was complex and dealt with Blockchain transactions that are outside the ken or familiarity of the average juror. He also drew conclusions, based on his assessment of those Blockchain transactions, that go to the ultimate issues in this case. In such circumstances, it is clear, as stated above, that the defense is entitled to call a rebuttal expert witness to address that testimony head on.

Moreover, the "mechanics" of Bitcoin transactions are a necessary element of any Bitcoin tracking analysis, and the defense should be permitted to put on expert testimony regarding such "mechanics" because they are not within the knowledge of the average juror. The government admits as much when it states, at 5, that "[t]he 'mechanics' of Bitcoin transactions to which the Defense Letter refers – 'wallets,' 'accounts,' 'exchanges,' and the "[B]lockchain' – are concepts familiar to any layperson *who has ever used Bitcoins*." As the Court is well-aware, the vast majority of laypeople, including all of the jurors on this case, have never used Bitcoin. Thus, expert testimony is completely appropriate, and necessary, as to this issue.

Thus, Mr. Antonopoulos should not be precluded from providing relevant and material testimony as to the mechanics of Bitcoin transactions, the ability to track transactions and participants in Bitcoin transactions, and most critically, as to the Bitcoins transferred between Mr. Ulbricht's laptop and the Silk Road Market server wallets.

IV. *Mr. Antonopoulos Should Be Permitted to Provide Expert Testimony On the Subjects of Bitcoin Speculating and Mining*

The government claims, at 6, that the "concepts of Bitcoin speculating and Bitcoin mining are not relevant to the case" and therefore that such testimony should not be permitted. In support of this position they cite *United States v. Zafar*, No. 06-CR-289JG, 2008 WL 123954 (E.D.N.Y. Jan. 11, 2008). The *Zafar* case is clearly distinguishable from the circumstances of Mr. Ulbricht's case.

In *Zafar*, the Court concluded that because there was no independent evidence that the

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defendant used stock selection software at the time of the crimes charged, expert testimony regarding how the software worked, which could imply to the jury that the defendant chose stocks on the basis of recommendations made by the software, was inappropriate. *Zafar*, No. 06-CR-289JG, 2008 WL 123954, at *2 (E.D.N.Y. Jan. 11, 2008). Given that trial counsel agreed with the Court that the expert would be unable to testify whether the stock-selection software would have led users to choose the stocks at issue in the case, that portion of his testimony related to how the software worked was excluded because it would have been "an impermissible substitute for evidence that the trading activity at issue . . . was the consequence of the use of this software." *Id.* at *2 (E.D.N.Y. Jan. 11, 2008).

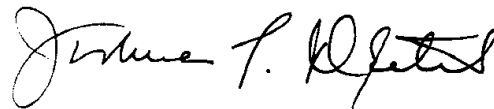
Here, the factual link between Bitcoin speculating – a possible source of the Bitcoins on Mr. Ulbricht's laptop and thus relevant to this case – and Mr. Ulbricht has been independently established by the testimony of Richard Bates, who testified that Mr. Ulbricht was engaged in Bitcoin speculating during the relevant time.

Accordingly, Mr. Antonopoulos should be permitted to explain the concepts of Bitcoin mining and speculating to the jury.

Conclusion

Accordingly, for all these reasons, it is respectfully submitted that the government's application to preclude the expert testimony of proposed defense expert Andreas M. Antonopoulos should be denied in its entirety.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joshua L. Dratel", written in a cursive style.

Joshua L. Dratel

JLD/lal

cc: Serrin Turner
Timothy T. Howard
Assistant United States Attorneys